

Amendments to the Claims:

1. (Cancelled)
2. (Previously Presented) A bone graft substitute composition comprising:
  - (a) calcium sulfate;
  - (b) a mixing solution;
  - (c) a cellulose derivative; and
  - (d) demineralized bone.
3. (Previously Presented) The bone graft substitute composition of claim 2, comprising approximately 40% demineralized bone matrix by dry weight.

4-11 (Cancelled)

12. (Previously Presented) A bone graft substitute composition comprising:
  - (a) approximately 80-120 parts medical grade calcium sulfate hemihydrate by weight;
  - (b) approximately 21-250 parts sterile water by weight;
  - (c) approximately 1-40 parts carboxymethylcellulose by weight; and
  - (d) approximately 10-100 parts demineralized bone matrix by weight.
13. (Previously Presented) The bone graft substitute composition of claim 2, wherein the mixing solution is selected from a group consisting of sterile water, an inorganic salt, and a cationic surface active agent.
14. (Previously Presented) The bone graft substitute composition of claim 13, wherein the cationic surface agent is selected from a group consisting of sodium chloride, phosphate buffered saline, potassium chloride, sodium sulfate, ammonium sulfate, ammonium acetate, and sodium acetate.

15. (Previously Presented) The bone graft substitute composition of claim 2, wherein the mixing solution comprises sterile water.

16. (Previously Presented) The bone graft substitute composition of claim 2, wherein the cellulose derivative is selected from a group consisting of sodium carboxymethylcellulose, methylcellulose, hydroxypropyl methylcellulose, ethylcellulose, hydroxyethylcellulose and cellulose acetate butyrate.

17. (Previously Presented) The bone graft substitute composition of claim 2, wherein the cellulose derivative comprises carboxymethylcellulose.

18. (Previously Presented) The bone graft substitute composition of claim 2, wherein the calcium sulfate comprises calcium sulfate hemihydrate.

19. (Currently Amended) The bone graft substitute composition of claim 2, wherein the calcium sulfate comprises calcium sulfate hemihydrate, the mixing solution comprises sterile water, and the plasticizing substance cellulose derivative comprises carboxymethylcellulose.

20. (Previously Presented) The bone graft substitute composition of claim 19, comprising approximately 100 parts calcium sulfate hemihydrate by weight, approximately 11.1 parts carboxymethylcellulose by weight, approximately 162 parts water by weight, and approximately 69.4 parts demineralized bone matrix by weight.

21. (Previously Presented) The bone graft substitute composition of any one of claims 2, 3, and 12-20, further comprising a bone allograft.

22-34 (Cancelled)

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35. (Previously Presented) A method of making a bone graft substitute composition, the method comprising: providing a first composition comprising calcium sulfate, a cellulose derivative and demineralized bone matrix; and contacting the first composition with a mixing solution to form the bone graft substitute composition.

36. (Previously Presented) The method of claim 35, wherein the first composition further comprises a bone allograft.

37. (Previously Presented) The method of claim 35, further comprising forming the bone graft substitute composition into a putty.

38. (Previously Presented) The method of claim 35, wherein the calcium sulfate comprises calcium sulfate hemihydrate, the cellulose derivative comprises carboxymethylcellulose, and the mixing solution comprises sterile water.